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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,409	06/24/2005	Orlando Miguel Pires Dos Reis Moreira	NL02 1385 US	4233

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PHILIPS ELECTRONICS NORTH AMERICA CORPORATION  
INTELLECTUAL PROPERTY & STANDARDS  
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SAN JOSE, CA 95131

EXAMINER
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PETRANEK, JACOB ANDREW

ART UNIT	PAPER NUMBER
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2183

MAIL DATE	DELIVERY MODE
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09/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/540,409

Applicant(s)

PIRES DOS REIS MOREIRA ET AL.

Examiner

Jacob Petranek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-5, 7-8, and 10-11 are pending.
2. The office acknowledges the following papers:  
Claims and arguments filed on 8/6/2007.

***Withdrawn objections and rejections***

3. The nonstatutory obviousness-type double patenting for claims 1-7 have been withdrawn due to abandonment of the copending application.

***New Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagersten et al. (U.S. 5,887,138).

6. As per claim 1:

Hagersten disclosed a clustered instruction level parallelism processor, comprising:

A processor with a plurality of clusters (Hagersten: Figure 1 elements 12a-d, column 8 lines 10-29) each comprising at least one register file and at least one functional unit (Hagersten: Figure 1 elements 16a-b)(Official notice is given that

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processors contain functional unit and register files to execute instructions and process data.);

A bus means for connecting said clusters, said bus means comprising a plurality of bus segments (Hagersten: Figure 1 element 14, column 9 lines 1-14)(There's a plurality of busses that connect together the processing nodes.), and

Switching means arranged between adjacent bus segments, for connecting or disconnecting adjacent bus segments (Hagersten: Figure 1 element 24, column 9 lines 1-14)(The system interfaces allow for the busses to connect all of the nodes together.).

7. As per claim 2:

Hagersten disclosed the processor according to claim 1, wherein each cluster is coupled to at least one bus segment (Hagersten: Figure 1 element 14, column 9 lines 1-14)(Each cluster is connected to 4 busses to connect with all of the clusters.).

8. As per claim 3:

Hagersten disclosed the processor according to claim 1, wherein two or more clusters are coupled to the same bus segment (Hagersten: Figure 1 element 14, column 9 lines 1-14)(Each bus segment couples two clusters.).

9. As per claim 4:

Hagersten disclosed the processor according to claim 1, wherein said bus means is a multi-bus comprising at least two busses (Hagersten: Figure 3 elements 84-90, column 15 lines 47-61)(These elements buffer data that is sent and received to the processing node. Each node can send and receive data to/from another node.).

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10. Claims 5 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wertheim et al. (WO 01/73566 A2), in view of Dennis et al. (U.S. 6,978,459).

11. As per claim 5:

Wertheim disclosed a method for accessing a bus in a clustered instruction level parallelism processor, wherein said bus comprises at least one switching means along said bus, comprising the steps of:

Performing a sending operation based on a source register and a transfer word (Wertheim: Figure 2 element 162, page 7 lines 4-8)(A sending operation from a block to another includes the source and destination data, as well as data representing which switches to close/open. A block can correspond to a computation block in figure 1.), or

Performing a receiving operation based on a designation source register and a transfer word (Wertheim: Figure 2 element 162, page 7 lines 4-8)(A receiving operation from a block to another includes the source and destination data, as well as data representing which switches to close/open. A block can correspond to a computation block in figure 1.), and

Opening/closing said switching means according to said transfer word (Wertheim: Figure 2 elements 130, 140, and 150, page 7 lines 4-24)(The switch controls control if switches 1-3 are opened or closed.);

Wherein said transfer word represents the sending direction for sending operation and receiving direction for the receiving operation (Wertheim: Figure 2 element 164, column 7 lines 4-24)(The latch outputs the switch controls, which indicate the path of the data from the sender to the receiver.); and

Wherein said sending direction or said receiving direction is left, right, or all (Wertheim: Figure 3 element 210)(When data is sent from block A, the switch signal is right/left when data is sent to block B/block C respectfully. When data is sent from block A to blocks B and C, then the direction is all.).

Wertheim failed to teach a sending operation based on a source register and a receiving operation based on a designation source register.

However, Dennis disclosed a sending operation based on a source register and a receiving operation based on a designation source register (Dennis: Figure 11 elements 1106-1114)(Dennis disclosed sending a data value to a second processing element. Dennis disclosed that the data value could be anything that can be written to a shared resource. Thus, it's obvious to one of ordinary skill in the art that the data value can be a register value. The second processing element performs a receiving operation to fetch the data from the shared memory and stores it in a register.).

Wertheim disclosed forwarding data from function units, but failed to teach how the data is chosen and forwarded to another functional unit. Dennis disclosed that a register value can be forwarded from one processing element to another via a shared memory (Dennis: Figure 11). One of ordinary skill in the art would have been motivated to add the functionality of Dennis in order to allow for register value communication between processing elements. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to allow for data transfers between processing elements for the advantage of sharing processing results between processing elements.

12. As per claim 10:

Wertheim and Dennis disclosed the method according to claim 5, wherein no switching means is opened, if said sending direction or receiving direction is all (Wertheim: Figure 4 element 210, page 8 lines 1-3)(When data is sent from block A to blocks B and C, then the direction is all. This results in all of the switches being closed.).

13. As per claim 11:

Wertheim and Dennis disclosed the method according to claim 5, wherein said transfer word represents a switch configuration word, wherein said switching means are opened or closed according to said configuration word (Wertheim: Figure 2 element 164, page 7 lines 4-24)(The decoded switching signals determine which switch elements are open or closed.).

14. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wertheim et al. (WO 01/73566 A2), in view of Dennis et al. (U.S. 6,978,459), further in view of Woo et al. ("Resource allocation in a dynamically partitionable bus network using a graph coloring algorithm").

15. As per claim 7:

Wertheim and Dennis disclosed the method according to claim 5.

Wertheim and Dennis failed to teach the default state of said switching means is closed.

However, Woo discloses the default state of said switching means is closed (Woo: Page 1798 column 2 paragraph 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have make the necessary modification on he combination of Wertheim applicants' admitted prior art to incorporate Woo's invention. One of ordinary skill in the art would be motivated to maximize the parallel communication (page 1794 column 2 paragraph 2).

16. As per claim 8:

Wertheim, Dennis, and Woo disclosed the method according to claim 7, wherein the one of said switching means, which is closest to a cluster (element 110) performing said sending operation or said receiving operation in the direction opposite of said sending or said receiving direction, is opened (Wertheim: Figure 5, page 8 lines 3-7)(The block in figure 5 not either receiving or sending data has it's closest switch open. For example, when sending data from block B to block C, block A will be have a switching element closest to it that's closed.).

### ***Response to Arguments***

17. The arguments presented by Applicant in the response, received on 8/6/2007 are partially considered persuasive.

18. Applicant argues "Applicants respectfully defer discussion of the provisional non-statutory double patenting rejections to a later data, as necessary."

This argument is found to be persuasive for the following reason. The examiner notes that the provisional double patenting rejections were based on patent application no. 10/540,702, which since the last final rejection has been abandoned. Thus, the



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double patenting rejections have been withdrawn due to the copending application going abandoned.

19. Applicant argues "Wertheim and Admission failed to provide proper motivation for the combination."

This argument is not found to be persuasive. Regardless, the examiner has given the claim a new ground of rejection and the applicant's arguments are thus moot.

20. Applicant argues "Wertheim failed to teach wherein said transfer word represents the sending direction for sending operation and receiving direction for the receiving operation."

This argument is not found to be persuasive for the following reason. Element 164 outputs controls to the switching elements to control if they are open or closed. The switches being controlled allows for the data to be sent in particular directions to a particular block.

21. Applicant argues "Wertheim failed to teach wherein said sending direction or said receiving direction is left, right, or all."

This argument is not found to be persuasive for the following reason. Element 164 outputs controls to the switching elements to control if they are open or closed. The switches being controlled allows for the data to be sent in particular directions to a particular block. For example, when data is sent from block A, the switch signal is right/left when data is sent to block B/block C respectfully. When data is sent from block A to blocks B and C, then the direction is all.

### ***Conclusion***

The following is text cited from 37 CFR 1.111(c): In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pechanek et al. (U.S. 6,606,699), teaches a data interface among processing clusters.

Emberson et al. (U.S. 6,957,318), teaches an array processor with clusters organized in west, east, north, and south type formations.

Baumgartner et al. (U.S. 6,334,177), teaches a numa bridge to connect the nearest two clusters together for communication purposes.

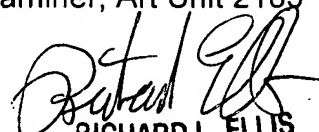
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Petranek whose telephone number is 571-272-5988. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacob Petranek  
Examiner, Art Unit 2183



RICHARD L. ELLIS  
PRIMARY EXAMINER